

## TECHNICAL BASIS FOR TIER I OPERATING PERMIT

**DATE:** October 24, 2002

**PERMIT WRITER:** Michael Stambulis

**PERMIT COORDINATOR:** Bill Rogers

**SUBJECT:** *TECHNICAL MEMORANDUM FOR TIER I OPERATING PERMIT*  
AIRS Facility No. 019-00048, INEEL, Research Center Complex  
Final Tier I Operating Permit

<b>Permittee:</b>	Idaho National Engineering and Environmental Laboratory Research Center Complex
<b>AIRS Facility Number:</b>	019-00048
<b>Air Quality Control Region:</b>	61
<b>AIRS Facility Classification:</b>	B
<b>Standard Industrial Classification:</b>	8733
<b>Zone:</b>	12
<b>UTM Coordinates:</b>	416.4, 4818.6
<b>Facility Mailing Address:</b>	Department of Energy Idaho Operations Office 850 Energy Drive Idaho Falls, ID 83401-1562
<b>County:</b>	Bonneville
<b>Facility Contact Name and Title:</b>	Steve Winn, Site Area Director
<b>Contact Name Phone Number:</b>	(208) 526-1075
<b>Responsible Official Name and Title:</b>	<ul style="list-style-type: none"><li>• W.E. Bergholz, DOE-ID Acting Manager, (208) 526-2497</li><li>• B.D. Shipp, President of Bechtel BWXT Idaho, LLC , (208) 526-4600</li></ul>
<b>Exact plant Location:</b>	2351 North Boulevard, Idaho Falls, Idaho
<b>General Nature of Business &amp; Kinds of Products:</b>	Research Facility

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## LIST OF ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu/hr	British Thermal Units Per Hour
CFR	Code of Federal Regulations
Ci/yr	curies per year
DEQ	Department of Environmental Quality
DOE	Department of Energy
EPA	U.S. Environmental Protection Agency
gr/dscf	grains (1 lb = 7,000 grains)per dry standard cubic feet
HAPs	hazardous air pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
IRC	Idaho National Engineering and Environmental Laboratory Research Center
km	kilometer
kw	kilowatt
lb/hr	pounds per hour
mrem/yr	millirem per year
MMBtu/hr	million British thermal units per hour
NO <sub>x</sub>	nitrogen oxides
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter of 10 micrometers or less
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
PW	process weight
SIC	Standard Industrial Classification
SIP	State Implementation Plan
UTM	Universal Transverse Mercator
VOCs	volatile organic compounds

## **PUBLIC COMMENT / AFFECTED STATES / EPA REVIEW SUMMARY**

A public comment period for the IRC complex draft Tier I operating permit was held between June 8, 2002 and July 26, 2002 in accordance with IDAPA 58.01.01.364 (*Rules for the Control of Air Pollution in Idaho*). A public hearing was requested, and the hearing was held on June 25, 2002 in Idaho Falls. The only entity to submit comments was the INEEL-IRC facility.

IDAPA 58.01.01.008.01 defines *affected states* as: "*All states; whose air quality may be affected by the emissions of the Tier I source and that are contiguous to Idaho; or that are within 50 miles of the Tier I source.*"

A review of the site location information included in the permit application indicates that the facility is located within 50 miles of the Wyoming border. The state of Wyoming was therefore provided an opportunity to comment on the draft Tier I operating permit.

On August 29, 2002, the proposed operating permit and the technical memorandum were sent to EPA for their 45-day review as required by IDAPA 58.01.01.366. EPA did not provide written objection to the proposed permit.

## **1. PURPOSE**

The purpose of this memorandum is to describe the legal and factual basis for this draft Tier I operating permit in accordance with IDAPA 58.01.01.362.

The DEQ has reviewed the information provided by Bechtel BWXT Idaho, LLC regarding the operation of the IRC complex located in Idaho Falls, Idaho. This information was submitted based on the requirements to submit a Tier I operating permit in accordance with IDAPA 58.01.01.300.

## **2. SUMMARY OF EVENTS**

On June 4, 2001, DEQ received a Tier I operating permit application (dated May 2001) from Bechtel BWXT Idaho, LLC for the IRC facility located in Idaho Falls, Idaho. The IRC complex is a government-owned facility managed by the DOE and administered by Bechtel BWXT Idaho, LLC.

On August 3, 2001, the application was determined complete.

On November 30, 2001, DEQ issued a letter requesting additional information.

Between January 16 and January 25, 2002, Michael Stambulis of DEQ Technical Services participated in a conference call with IRC representatives, visited the facility, and had several meetings with IRC representatives. These actions provided the information requested in the letter issued in November 2001.

On March 8, 2002, a draft Tier I operating permit was submitted to INEEL for a facility review.

On March 20, 2002, DEQ received comments from INEEL. A copy of the comments provided by INEEL is included in Appendix A of this memorandum.

A 30-day public comment period for the IRC draft Tier I operating permit was held in accordance with IDAPA 58.01.01.364. DEQ's response to comments is included in Appendix B of this memorandum.

On August 29, 2002, the proposed operating permit and the technical memorandum were sent to EPA for their 45-day review. EPA did not provide written objection to the proposed permit; therefore, the final operating permit was prepared on October 22, 2002.

## **3. BASIS OF THE ANALYSIS**

The following documents were relied upon in preparing this memorandum and the Tier I operating permit:

- Tier I operating permit application, received on June 4, 2001
- Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, January 1995, Office of Air Quality Planning and Standards, EPA
- Guidance developed by the EPA and DEQ
- Title V permits issued by other jurisdictions
- Documents and procedures developed in the Title V Pilot Operating Permit Program

## **4. FACILITY DESCRIPTION**

### **4.1 GENERAL PROCESS DESCRIPTION**

The following process description is taken from IRC's Tier I application. The Tier I application can be found in the public comment package.

Facilities at the IRC complex include offices, laboratories, and technical support buildings. The largest is a three-story office building connected by an enclosed walkway to a one-story laboratory building containing 66 laboratories. Other buildings at the IRC complex include, but are not limited to, the Research Office Building, Physics Building, Electric Vehicle Building, and Systems Analysis Facility.

The laboratory/office building is principally an experimental research facility dedicated to a wide range of research areas. Included in these activities are:

- industrial microbiology
- geochemistry
- materials characterization
- welding
- ceramics
- thermal fluids behavior
- materials testing
- nondestructive evaluation of materials using a standard industrial x-ray device, x-ray diffusion, and x-ray fluorescence
- analytical and environmental chemistry
- and biotechnology

Sample analysis and support functions are also conducted at the IRC complex.

### **4.2 FACILITY CLASSIFICATION**

This facility is a Tier I source as defined in IDAPA 58.01.01.006.104.c. The IRC is subject to the radionuclide performance standard in accordance with 40 CFR Part 61, Subpart H (*National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*), and is therefore subject to Tier I operating permit requirements in accordance with IDAPA 58.01.01.300. The facility is not a major facility as defined by IDAPA 58.01.01.008.10. The facility is not subject to PSD permitting requirements. The SIC code defining the facility is 8733, and the AIRS/AFS facility classification code is B.

The permittee has certified in the permit application that the facility is not a major facility in regards to HAP emissions.

### **4.3 AREA CLASSIFICATION**

The facility is located in AQCR 61 and in Bonneville County. The area is classified as unclassifiable for all federal and state criteria pollutants. There are no Class I areas within 10 km of the facility.

### **4.4 PERMITTING HISTORY**

No air quality permits to construct or operating permits have been issued to the facility.

### **4.5 EMISSIONS DESCRIPTION**

The facility has certified in their permit application the PTE for all criteria pollutants is less than 100 T/yr per, the PTE for all HAPs is less than 25 T/yr aggregate, and the PTE any single HAP is less than 10 T/yr.

Emissions from the facility include criteria pollutants from fuel-burning equipment and internal combustion engines, VOCs from organic storage vessels, PM and PM<sub>10</sub> from shop activities, and radionuclides from analytical and research laboratories. All emissions units at the facility were identified and certified by the applicant as insignificant activities in accordance with IDAPA 58.01.01.317.01 and .02. The facility is designated as a Tier I source because it is defined as an affected facility in accordance with 40 CFR Part 61.90.

## **5. REGULATORY ANALYSIS**

### **5.1 FACILITY-WIDE APPLICABLE REQUIREMENTS**

#### **5.1.1 Fugitive Particulate Matter – IDAPA 58.01.01.650-651**

##### **5.1.1.1 Requirement**

Permit Condition 2.1 states all reasonable precautions shall be taken to prevent particulate matter from becoming airborne in accordance with IDAPA 58.01.01.650-651.

##### **5.1.1.2 Compliance Assurance**

Permit Condition 2.2 states the permittee is required to monitor and maintain records of the frequency and the methods used by the facility to reasonably control fugitive emissions. Some example given in IDAPA 58.01.01.651 of ways to reasonably control fugitive emissions include; using water or chemicals, applying dust suppressants, using control equipment, covering trucks, paving roads or parking areas, and removing materials from streets.

Permit Condition 2.3 requires the permittee to maintain a record of all fugitive dust complaints received. In addition, the permittee is required to take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. The permittee is also required to maintain records that include the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

To ensure that the methods being used by the permittee to reasonably control fugitive emissions, whether or not a complaint is received, Permit Condition 2.4 requires the permittee to conduct periodic inspections of the facility. The permittee is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If the permittee determines that the fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee is also required to maintain records of the results of each fugitive emissions inspection.

Permit Conditions 2.3 and 2.4 require the permittee take corrective action as expeditiously as practicable. In general, DEQ believes taking corrective action within 24 hours of receiving a valid complaint, or determining that fugitive particulate emissions are not being reasonably controlled, meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

#### **5.1.2 Control of Odors – IDAPA 58.01.01.775-776**

##### **5.1.2.1 Requirement**

Permit Condition 2.5 and IDAPA 58.01.01.776 both state: *"No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution."* This condition is currently considered federally enforceable until such time it is removed from the SIP, at which time it will be a state-only enforceable requirement.

### **5.1.2.2 Compliance Assurance**

Permit Condition 2.6 requires the permittee to maintain records of all odor complaints received. If the complaint has merit, the permittee is required to take appropriate corrective action as expeditiously as practicable. The records are required to contain the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Permit Condition 2.6 requires the permittee take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

### **5.1.3 Visible Emissions – IDAPA 58.01.01.625**

#### **5.1.3.1 Requirement**

Permit Condition 2.7 and IDAPA 58.01.01.625 state: *"(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined . . ."* by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, NO<sub>x</sub>, and/or chlorine gas are the only reason(s) for the failure of the emissions to comply with the requirements of this rule.

#### **5.1.3.2 Compliance Assurance**

To reasonably assure compliance with the visible emissions rule, Permit Condition 2.8 requires the permittee conduct quarterly facility-wide visible emissions inspections. The permittee is required to inspect potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection consists of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emissions covered by this section, the permittee must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee must take corrective action and report the exceedance in its annual compliance certification and in accordance with the excess emissions rules in IDAPA 58.01.01.130-136. The permittee is also required to maintain records of the results of each visible emissions inspection and each opacity test when conducted. These records must include the date of each inspection, a description of the permittee's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken. Permit Condition 2.8 requires the permittee take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

### **5.1.4 Excess Emissions – IDAPA 58.01.01.130-136**

#### **5.1.4.1 Requirement**

Permit Condition 2.9 requires that the permittee comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset, and breakdowns. This section is fairly self-explanatory and no additional detail is necessary in this technical analysis. It should be noted however, that subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under subsection 131.02 of the *Rules* to allow DEQ to determine if



an enforcement action to impose penalties is warranted. Section 131.01 states "... The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05." Failure to prepare or file procedures pursuant to Sections 133.02 and 134.04 is not a violation of the Rules in and of itself, as stated in subsections 133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in Subsections 133.02, 133.03, 134.04, and 134.05; and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

#### **5.1.4.2 Compliance Assurance**

Methods for reasonably assuring compliance are contained within the text of Permit Condition 2.9. No further clarification is necessary here.

#### **5.1.5 Open Burning – IDAPA 58.01.01.600-616**

IDAPA 58.01.01.600-616 establish regulations to protect public health and welfare from air pollutants resulting from open burning. Permit Condition 2.10 indicates the permittee must comply with these regulations.

#### **5.1.6 Renovation/Demolition – 40 CFR Part 60, Subpart M**

The regulations in 40 CFR Part 61, Subpart M are intended to control asbestos releases to the atmosphere. Asbestos-containing materials at the facility were identified in the permit application. The permittee shall comply with all applicable portions of 40 CFR Part 61, Subpart M when conducting any renovation or demolition activities at the facility. Refer to Permit Condition 2.11 and 40 CFR Part 60, Subpart M.

#### **5.1.7 Chemical Accident Prevention Provisions – 40 CFR Part 68.10(a)**

The facility is currently not subject to the requirements of 40 CFR Part 68. However, should the facility ever become subject to 40 CFR Part 68, it must comply with the requirements of the Chemical Accident Prevention Provisions no later than the latest of the following dates:

- Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130.
- The date on which a regulated substance is first present above a threshold quantity in a process.

#### **5.1.8 Fuel-burning Equipment – IDAPA 58.01.01.677**

##### **5.1.8.1 Requirement**

Permit Condition 2.13 and IDAPA 58.01.01.677 establish grain-loading standards for fuel-burning equipment less than 10 MMBtu/hr heat input capacity. The boilers at the facility combust natural gas exclusively. In accordance with IDAPA 58.01.01.677 and Permit Condition 2.13, the allowable PM emissions from these boilers is 0.015 gr/dscf corrected to 3% oxygen.

##### **5.1.8.2 Compliance Assurance**

The facility utilizes two boilers at the facility, each with a maximum rated capacity of 2.65 MMBtu/hr. The permittee has certified in the application that the boilers combust natural gas. Using AP-42 emissions factors, Appendix C of this memorandum contains calculations that reasonably assure compliance with the grain-loading standard so long as natural gas is combusted in the boilers. Emissions factors given in AP-42 are generally accepted as conservative estimates. Even a conservative estimate of emissions

from natural gas combustion results in an approximate grain-loading well below the standard of 0.015 gr/dscf.

#### **5.1.8.3 Monitoring and Recordkeeping**

No monitoring or recordkeeping is required to assure compliance with IDAPA 58.01.01.677, because the boilers use natural gas exclusively and potential emissions are well below the regulatory standard.

#### **5.1.9 Fuel-Sulfur Content – IDAPA 58.01.01.728**

##### **5.1.9.1 Requirement**

Permit Condition 2.14 and IDAPA 58.01.01.728 establish fuel-sulfur content limits of 0.3% by weight for No. 1 distillate fuel oil, and 0.5% by weight for No. 2 distillate fuel oil.

##### **5.1.9.2 Compliance Assurance**

Compliance monitoring for Permit Condition 2.14 consists of maintaining records from the fuel oil supplier in accordance with Permit Condition 2.20.

#### **5.1.10 Process Weight Rate – IDAPA 58.01.01.700-703**

##### **5.1.10.1 Requirement**

Refer to Permit Condition 2.15 and IDAPA 58.01.01.700-703. The process weight limitations apply to any process or process equipment at a facility, and establish PM emissions limits based on process weight. The IRC complex has a wood shop in the northwest side of Building IRC 603 that is subject to this requirement. The wood shop exhausts through a cyclone.

##### **5.1.10.2 Compliance Assurance**

The facility certified that the maximum process weight from the wood shop is 175 lbs/hr. Based on the equation listed in Permit Condition 2.15.1, the maximum allowable PM emissions are  $0.045(175)^{0.60}$ , or 1.0 lbs/hr.

The facility weighed the amount of sawdust collected in the cyclone for a known time period. It was determined that the cyclone collects approximately 5 lb/hr at a manufacturer rated efficiency of 95%. At this efficiency and collection rate, the PM emissions rate is approximately 0.25 lbs/hr.

##### **5.1.10.3 Monitoring and Recordkeeping**

Compliance with the process weight requirement is reasonably assured so long as a cyclone is installed and operated when the wood shop is operated. Therefore, the permit contains a condition to operate and maintain a cyclone in the wood shop.

#### **5.1.11 Recycling and Emissions Reduction – 40 CFR Part 82**

The regulations in 40 CFR Part 82, Subpart F are intended to reduce emissions of Class I and Class II refrigerants to the lowest achievable level during the service, maintenance, repair, and disposal of appliances in accordance with Section 608 of the Clean Air Act. This is a self-explanatory regulation. Refer to Permit Condition 2.16 and 40 CFR Part 82.

### **5.2 RADIONUCLIDE SOURCES**

#### **5.2.1 Emissions Unit Description**

Building IRC 603 has both analytical and research laboratories. The analytical activities support various process and environmental, physical, and chemical analyses. Laboratory fumehoods are a potential

source of radionuclide emissions from the facility. The radionuclide sources at the facility are subject to regulation under 40 CFR Part 61, Subpart H.

#### **5.2.2 Requirements**

Permit Condition 3.1 of the Tier I operating permit states: *"The permittee shall not emit radionuclides from the facility in amounts exceeding those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr."*

Radiological emissions standards for DOE facilities are defined in 40 CFR Part 61, Subpart H. Permit Condition 3.1 is a paraphrase of 40 CFR Part 61.92. The requirement is applicable to the facility in accordance with 40 CFR Part 61.90 because IRC is a DOE facility that emits radionuclides other than radon-222 and radon-220 to the atmosphere.

#### **5.2.3 Compliance Assurance**

Permit Condition 3.2.1 of the Tier I operating permit states: *"The permittee shall record the annual possession quantities in Ci/yr of radionuclides identified in Table 1 of Appendix E of 40 CFR Part 61."*

Permit Condition 3.2.2 of the Tier I operating permit states: *"If the annual possession quantities of any radionuclide exceeds the quantity listed in Table 1 of Appendix E, the permittee shall comply with the emission monitoring and test procedures in accordance with 40 CFR 61.93."*

Sources that could discharge radionuclides to the atmosphere in quantities that could cause an effective dose equivalent in excess of 1% of the standard (0.1 mrem/yr) are subject to requirements for continuous emissions monitoring in accordance with 40 CFR Part 61.93(a) and (b)(2). The facility has certified in the application that the IRC complex does not have any such sources. In accordance with 40 CFR Part 61.93(a) and Part 61.93(b)(4)(i), all radiological sources are subject to annual dose modeling and periodic confirmatory measurements. However, the permittee has obtained approval from the EPA to allow compliance with the applicable requirement to be demonstrated in accordance with Appendix E of 40 CFR Part 61. The request and approval letters for this compliance methodology are presented in Appendix D of this memorandum.

40 CFR Part 61, Appendix E allows a facility to demonstrate compliance with the radionuclide standard if it maintains an inventory of radionuclides below the possession quantity limit, in lieu of dose modeling and periodic confirmatory measurements. If possession quantities of any radionuclides are greater than the limits established in Appendix E of 40 CFR Part 61, IRC is required to perform dose modeling and/or periodic confirmatory measurements.

#### **5.2.4 Monitoring, Recordkeeping, and Reporting**

Permit Condition 3.2.3 of the Tier I operating permit states: *"The permittee shall maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine possession quantities or the effective dose equivalent."*

Permit Condition 3.2.3 requires IRC to maintain records demonstrating how the possession quantities and/or dose equivalents were determined.

Permit Condition 3.3 of the Tier I operating permit states: *"The permittee shall prepare and submit to EPA and the Department an annual report by June 30 in accordance with 40 CFR 61.94(a). The annual report shall include, but is not limited to, the annual possession quantities of each radionuclide at the facility or the results of monitoring and dose calculations required in 40 CFR 61.93. Applicable information required by 40 CFR 61.94(b), (c), and (d) shall be included in the annual report."*

Permit Condition 3.3 requires IRC to report annual possession quantities of radionuclides and any dose calculations performed to determine compliance with 40 CFR Part 61.92.

## 6. **INSIGNIFICANT ACTIVITIES**

Listed below are the insignificant activities described by the source in accordance with IDAPA 58.01.01.317:

**Table 6.1 Insignificant Activities**

<b>Description</b>	<b>Insignificant Activities Section Citation IDAPA 58.01.01.17.01.b.i</b>
Organic storage tank #635A – 300 gallon capacity	IDAPA 58.01.01.317.01.b.i(3)
Organic storage tank #718 – 500 gallon capacity	IDAPA 58.01.01.317.01.b.i(3)
Organic storage tank #725 – 2,500 gallon capacity	IDAPA 58.01.01.317.01.b.i(3)
Boiler, Building IRC 603 – 2.65 MMBtu/hr	IDAPA 58.01.01.317.01.b.i(18)
Boiler, Building IRC 603 – 2.65 MMBtu/hr	IDAPA 58.01.01.317.01.b.i(18)
Welding activities, Building IRC 603	IDAPA 58.01.01.317.01.b.i(9)
Painting activities, Building IRC 603	IDAPA 58.01.01.317.01.b.i(17)
Analytical laboratories, various buildings	IDAPA 58.01.01.317.01.b.i(30)
185-hp firewater pump, Building IRC 635	IDAPA 58.01.01.317.01.b.i(7)
355-hp emergency generator, Building IRC 603	IDAPA 58.01.01.317.01.b.i(7)
75-kw emergency generator, Building IRC 602	IDAPA 58.01.01.317.01.b.i(7)

## 7. **ALTERNATIVE OPERATING SCENARIOS**

No alternative operating scenarios were identified by the facility.

## 8. **TRADING SCENARIOS**

There were no trading scenarios requested by the facility.

## 9. **COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION**

### 9.1 **COMPLIANCE PLAN**

The Tier I operating permit application for IRC indicated the facility was in compliance with all applicable regulations at the time that the application was submitted; therefore, no compliance schedule is required at this time. Any applicable requirement that becomes effective during the term of this permit shall be met on a timely basis, and continual compliance must be shown for each applicable requirement with which the permittee was in compliance at the time the Tier I operating permit application was submitted. Refer to General Provisions 20.1 through 20.4.

### 9.2 **COMPLIANCE CERTIFICATION**

The permittee is required to submit a periodic compliance certification for each emissions unit in the form of an annual report to DEQ and the EPA annually beginning 12 months from the permit issuance date. The permittee must certify compliance with all terms and conditions of the permit including, but not limited to, fugitive emissions standards, visible emissions standards, steam production, compliance testing, and radionuclides possession quantities and/or dose equivalents in accordance with IDAPA 58.01.01.322.11. Refer to General Provision 21.

## 10. ACID RAIN PERMIT

The facility is not required to obtain an acid rain permit.

## 11. AIRS DATABASE

**AIRS/AFS<sup>a</sup> FACILITY-WIDE CLASSIFICATION<sup>b</sup> DATA ENTRY FORM**

AIR PROGRAM	SIP <sup>c</sup>	PSD <sup>d</sup>	NSPS <sup>e</sup> (Part 60)	NESHAP <sup>f</sup> (Part 61)	MACT <sup>g</sup> (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
POLLUTANT							
SO <sub>2</sub> <sup>h</sup>	B						U
NO <sub>x</sub> <sup>i</sup>	B						U
CO <sup>j</sup>	B						U
PM <sub>10</sub> <sup>k</sup>	B						U
PT (Particulate) <sup>l</sup>	B						
VOC <sup>m</sup>	B					0.72	U
THAP (Total HAPs) <sup>n</sup>	B						
			<b>APPLICABLE SUBPART</b>				
			Subpart H				

<sup>a</sup> Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

<sup>b</sup> AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

## 12. REGISTRATION FEES

The IRC facility is not a major facility as defined by IDAPA 58.01.01.008.10. Therefore, the facility is not subject to annual registration and registration fees in accordance with IDAPA 58.01.01.387.

## 13. RECOMMENDATION

Based on the Tier I application and review of the federal regulations and state rules, staff recommends that DEQ issue a final Tier I operating permit to IRC for their facility located in Idaho Falls, Idaho.

MJS/tk

\\DEQ-STO\GROUPS\Air Quality\Stationary Source\SS Ltd\T1\NEEL - IRC\Final\NEEL-IRC Final TM.doc

cc: Jorge Garcia, Idaho Falls Regional Office  
Sherry Davis, Technical Services  
Laurie Kral, EPA - Region 10

***APPENDIX A***

**IDAHO NATIONAL ENGINEERING AND  
ENVIRONMENTAL LABORATORIES**

**IRC COMPLEX**

**INEEL COMMENTS**



Idaho National Engineering and Environmental Laboratory

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MAR 21 2002

DEPARTMENT OF ENVIRONMENTAL QUALITY  
STATE A Q PROGRAM

CCN 30823

March 20, 2001

Mr. Bill Rogers  
Title V Program Coordinator  
Stationary Source Program  
Air Quality Division  
1401 North Hilton  
Boise, ID 83706-1255

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY RESEARCH  
CENTER (IRC) DRAFT TIER I PERMIT COMMENTS

Dear Mr. Rogers:

Enclosed please find our comments to the Tier 1 OP No. 01900048 (Enclosure 1). This letter serves as a formal follow-up to the comments e-mailed on March 20, 2002 (Enclosure 2).

Please note that the e-mail was submitted, as agreed, prior to the "10 days of receipt" requirement in your March 8, 2002 letter which was received via Fed Ex March 11, 2002.

Please respond, in writing, with your resolution to the comments in the form of a revised draft permit. We request a copy of the revised permit prior to public comment.

If you have any questions, please contact Harrison Orr at 208-526-0759, or Catherine Reno at 208-526-6888.

Sincerely,




Leah V. Street, Manager  
Sitewide Environmental Monitoring

HRO:caq

Enclosure

cc: A. D. Croft, ANL-W, MS 6000  
E. J. Fowler, NRF, MS 6001  
T. L. Perkins, DOE-ID, MS 1216  
S. A. Woolf, DOE-ID, MS 1216

Mr. Bill Rogers  
March 2012:03 PM12:03 PM, 2001  
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bcc: R. H. Guymon, MS 3428  
M. Miles, MS 4110  
H. R. Orr, MS 4110  
C. A. Reno, MS 4110   
J. E. Rugg, MS 3428  
Correspondence Control, MS 3106  
Leah V. Street File (LVS-10-02)

Uniform File Code: 6103

Disposition Authority: ENV1-K-1

Retention Schedule: Cutoff at project completion. Destroy 5 years after petition/waiver expires.

NOTE: Original disposition authority, retention schedule, and Uniform Filing Code applied by the sender may not be appropriate for all recipients. Make adjustments as needed.



## INEEL IRC Tier I Comments

Item No.	Page No./ Section/Zone	Review Comment
1	Cover Page	Replace Facility Contact with Steve Winn Site Area Director 208-526-1075
2	Cover Page	Replace Responsible Official(s) with W.E. Bergholz, DOE-ID Acting Manager 208-526-2497 B.D. Shipp President, Bechtel BWXT Idaho, LLC 208-526-4600
3	Cover Page	Exact Plant Location replace with INEEL Research Center Complex, 2351 North Boulevard, Idaho Falls, Idaho 83401
4	Pg 4 Sec 1.2; Pg 5 Sec 2, line 2.17; Pg 10 Sec 2.17; Technical Analysis (TA) Pg 11 Sec 5.1.12	Delete references to 40 CFR 60, Subpart Kb The application incorrectly stated that the 15,000 gallon gasoline tank, #723, was subject to this regulation. The tank qualifies for an exemption as a gasoline service station. (40 CFR 60.110b.d.6). With the exemption of this tank the IRC has no other applicable requirements under this regulation.
5	Pg 4 Sec 1.3	Sentence should read "Table 1.1 below lists all sources of emissions regulated by 40 CFR Part 61 Subpart H. This program has not been delegated to the state of Idaho and is for information only."
6	Pg 5 Sec 2.2	Delete 'shall monitor and' The IRC does not produce fugitive dust except during construction activities.
7	Pg 6 Sec 2.4 and 2.8	Change quarterly to annual. The IRC does not have a history of emissions that impact either fugitive emissions or opacity.
8	Pg 7 Sec 2.9.2.2	First sentence should read "Notifying the Department of the <b>scheduled excess emissions...</b> "
9	Pg 11 Sec 2.21	Add second sentence to first paragraph. "The annual Radionuclide NESHAP report will be submitted to EPA and a copy supplied to the Department in accordance with 40 CFR Part 61.94(b)(9)."
10	Pg 13 Sec 3 Summary Description	Last sentence, first paragraph should read "This description is for information only since primacy for 40 CFR Part 61, Subpart H has not been delegated to Idaho."
11	Pg 13 Sec 3 Summary Description	2nd paragraph, last sentence, delete 'fume hoods' replace with 'activities'
12	Pg 14 Table 4.1	Add 'Organic storage tank, # 723 – 15,000 gallon capacity', IDAPA 58.01.01.317.b.i(30) This gasoline tank will have emission less than less than 1 t/yr of any hazardous air pollutant.
13	Pg 17 Sec 16	Change to read as follows 'The IRC is a non-major facility as defined by IDAPA 58.01.01.008.10. Therefore, the facility is not subject to annual registration and registration fees in accordance with IDAPA 58.01.01.526.'
14	Pg 18 Sec 21	Clarify what will need to be reported in annual compliance certification since the IRC has no significant emission units. We suggest a list of emission units with specific permit requirements/emission limits be tabulated. However, the IRC permit is not conducive for this suggestion due to no associated emissions requirements, but should be considered for other permits. This section should be removed for the IRC volume.
15	TA Cover Page	Replace Facility Contact with Steve Winn Site Area Director 208-526-1075
16	TA Cover Page	Replace Responsible Official(s) with W.E. Bergholz, DOE-ID Acting Manager 208-526-2497 B.D. Shipp President, Bechtel BWXT Idaho, LLC 208-526-4600

## INEEL IRC Tier I Comments

Item No.	Page No./ Section/Zone	Review Comment
17	TA Cover Page	Exact Plant Location replace with 2351 North Boulevard, Idaho Falls, Idaho 83401
18	TA Pg 5 Sec 4.1	2nd paragraph, 3rd sentence should read " Other buildings at the IRC Complex include, but not limited to, ..."
19	TA Pg 6 Section 4.2	<p>Delete first sentence in section. Replace deleted sentence with the following 'The facility is a Tier I Source as defined in IDAPA 58.01.01.006.104.c. The facility is not a major source as defined in IDAPA 58.01.01.008.10.'</p> <p>008.10.a defines being 'major' due to hazardous air pollutant emissions -- The IRC does not meet this definition since its' HAPs emission are less than the specified 10 tons for any one HAP or 25 tons for any combination of HAPs.</p> <p>008.10.b defines being 'major in non-attainment areas' -- the IRC is located in an attainment area.</p> <p>008.10.c defines being 'major' if a facility emits or has potential to emit 100 tons or more of any regulated air pollutant -- the IRC does not have actual or potential emissions of any regulated air pollutant equal to or over 100 t/yr.</p> <p>008.10.c.ii applies to those facilities that have emissions of 100 t/yr or more of any regulated air pollutant and need to include fugitive emissions into the determination of whether the facility is major. The IRC does not have any regulated air pollutant with emissions equal to or greater than 100 t/yr.</p>
20	TA Pg 6 Sec 4.2	Reference to 40 CFR 60 for Radnuclide NESHAPs, should be 40 CFR 61
21	TA Pg 6 Section 4.5	Change the first sentence "the PTE for all HAPs is less then 25 T/yr aggregate, and the PTE any single HAP is less than 10 T/yr." This language is provided for in IDAPA 58.01.01.008.10.a
22	Tech Memo pg 8 Section 5.1.3.2	Changing "quarterly" to "annually, or as needed for equipment start-up" The IRC does not have a history of emissions that impact either fugitive emissions or opacity.
23	TA Pg 9 Section 5.1.7	The Tech Memo states that the facility is not subject to this requirement, however, it is listed as a facility-wide condition. This section should be removed since primacy for 40 CFR Part 68.10(a) has not been delegated to Idaho and does not apply to the IRC.
24	TA Pg. 11 Sec 5.2	Add 'INFORMATION ONLY' next to title. Delete all facility wide references to permit conditions for the Radionuclide NESHAP since primacy for 40 CFR Part 61 Subpart H has not been delegated to Idaho.
25	TA Pg 12 Sec 5.2.4	Delete reference to 40 CFR Part 61.93 sections C and D. Sections C and D do not exist.
26	TA Pg 14 Sec 12	Change to read as follows 'The IRC is a non-major facility as defined by IDAPA 58.01.01.008.10. Therefore, the facility is not subject to annual registration and registration fees in accordance with IDAPA 58.01.01.526.'
27	TA Appendix B	Include page 2 of letter from DOE to EPA.

***APPENDIX B***

**IDAHO NATIONAL ENGINEERING AND  
ENVIRONMENTAL LABORATORIES**

**IRC COMPLEX**

**DEQ RESPONSE TO PUBLIC COMMENTS**

August 26, 2002

**STATE OF IDAHO  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
RESPONSE TO PUBLIC COMMENTS  
ON DRAFT AIR QUALITY TIER I OPERATING PERMIT  
FOR U.S. DEPARTMENT OF ENERGY  
THE IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY RESEARCH COMPLEX  
LOCATED IN IDAHO FALLS, IDAHO**

**Introduction**

As required by IDAPA 58.01.01.364 (*Rules for the Control of Air Pollution in Idaho*), the Department of Environmental Quality (Department) provided for public comment the U.S. Department of Energy's (DOE's) Idaho National Engineering and Environmental Laboratory Research Center Complex (IRC) draft Tier I operating permit. A public hearing was scheduled at the same time the public comment period was provided. Public comment packages, which included the application materials, draft permit, and technical memorandum, were made available for public review at the Idaho Falls Public Library, the Departments Idaho Falls Regional Office, and the Departments State Office in Boise. Copies of the draft permit and technical memorandum were also posted on the Departments Web site. The public comment period was held from June 8, 2002 to July 26, 2002. The public hearing was held on July 25, 2002 at the West Coast Hotel in Idaho Falls, Idaho. Comments regarding the air quality aspects of the draft permit are provided below with the Departments response immediately following. A proposed permit that incorporates the public comments has been crafted and will be sent to EPA Region 10 for their 45-day review.

**Public Comments and Department Responses**

**Comment 1:** We noticed that you've identified two responsible officials – one for DOE and one for Bechtel...We recommend that you modify condition 17 (certification) to specify that both officials must sign. For example, you could write, "All documents submitted to the Department shall be certified by both responsible officials identified in this permit in accordance with..."

The recommended text was added to General Provision 17 (Section 5). General Provision 17 now states:

*"All documents submitted to the Department shall be certified by both responsible officials identified in this permit in accordance with IDAPA 58.01.01.123 and comply with IDAPA 58.01.01.124."*

**Comment 2:** The application notes that 40 CFR Part 60, Subpart Kb applies to the source. We did not find Kb addressed in the permit. If the storage tanks at IRC are subject just to the recordkeeping requirement of Kb, we suggest the following permit language which we use in our permits:

(a) The permittee shall keep readily accessible records showing the dimension of the fuel storage tank vessel and an analysis showing the capacity of the storage vessel.  
[40 CFR 60.110b(c), 40 CFR 60.116b(b)]

(b) The permittee shall keep copies of the above required records for the life of the fuel storage tank.

[40 CFR 60.110b(c), 40 CFR 60.116b(a)]

The facility does include fuel storage tanks that are subject to only the recordkeeping requirements of Subpart Kb. The applicable recordkeeping requirements have been incorporated into the proposed permit as Permit Conditions 2.21.1 and 2.21.2.

**Comment 3:** ...throughout the (technical) memo uses phrases like "compliance demonstration", "to determine compliance", and "the permittee is in compliance with...so long as a cyclone is installed and operated." These phrases could be construed to limit the use of credible evidence to the activities designated in the permit which reasonably *assure* compliance but do not necessarily *demonstrate* compliance. For example, maintaining "records of the frequency and methods used to reasonably control fugitive emissions" doesn't demonstrate compliance, it simply documents the source's actions which may or may not represent reasonable precautions. Following are suggested alternatives to the above phrases: "compliance assurance monitoring" or "compliance monitoring"; "to assure compliance"; and compliance is reasonably assured so long as a cyclone is installed and operated." In general, "assure" and "assurance" should be used rather than "demonstrate" and "demonstration."

The technical memorandum has been changed throughout as requested.

**Comment 4:** For the facility wide conditions, the permit often uses the phrase "unless specified elsewhere in this permit." It would be better to unambiguously identify when a different requirement applies. For example, in this permit, it appears that the facility wide requirements **ONLY** apply, so the permit could leave off the "unless specified elsewhere" phrase entirely.

The phrase "unless specified elsewhere in this permit" has been removed from the facility-wide permit conditions as appropriate.

**Comment 5:** Delete all references to 40 CFR Part 68. As discussed in the Technical Analysis, Section 5.1.7, this is not an applicable requirement in accordance with IDAPA 58.01.01.008.03.

The requirement is a standard requirement in all Tier I operating permits issued by the Department. It is a requirement negotiated and agreed upon by the Department and EPA in order to meet the minimum requirements of the Title V program. Therefore, the Department has elected to retain the requirement in the permit.

**Comment 6:** Technical Memorandum – Section 5.1.3.2: Suggest changing "quarterly" to "annually, or as needed for equipment start-up"

Another comment stated: KYNF supports the quarterly opacity testing in lieu of the annual testing. However, even quarterly testing is 4/365. It would be more reasonable given the stated highly dynamic nature of IRC operations that the tests be completed monthly on rotating work days or quarterly with 8 randomly selected days. This would provide a much more complete picture of actual opacity variation.

The sources at the IRC include two natural gas fired boilers, laboratory hoods, and other small sources. Considering the source types, information regarding the facility available in the Department's source file, and the fact that there are no violations or complaints on file at the Idaho Falls regional office regarding visible emissions, the Department does not expect the IRC facility to be a significant source of visible emissions. Therefore, quarterly opacity monitoring is reasonable to assure compliance with the applicable requirement. Quarterly opacity monitoring is consistent with monitoring requirements in permits issued for similar sources.

**Comment 7:** Change 2<sup>nd</sup> sentence of the Section 3 Summary Description to read, "This description in Section 3 is for informational purposes only."

The state does not have primacy for radionuclide NESHAPs and should not try to impose any requirements that are state enforceable (emission limits, record keeping, or reporting) associated with Subpart H in this operating permit.

The requested statement has been added to the permit. The Tier I operating permit is a consolidation of all state and federal applicable requirements, and is not intended to create or impose any new requirements. No permits have been issued to DOE for the IRC; therefore, no state enforceable requirements are included in Section 3 of the operating permit.

**Comment 8:** Use the same Compliance Certification time periods in Section 21.1 of the Tier I operating permit general provisions outlined in the Technical Memorandum Section 9.2.

The time period for compliance certification reports in Section 21.1 of the operating permit states, *"Compliance certifications for all emissions units shall be submitted annually beginning 12 months from the permit issuance date..."* The Technical Memorandum Section 9.2 states, *"The permittee is required to submit a periodic compliance certification for each emissions unit in the form of an annual report to DEQ and the EPA within 30 days after the end of each calendar year."*

The reporting time periods are inconsistent. The time frame stated in Section 9.2 of the technical memorandum has been changed to be consistent with Section 21.1 of the permit. Compliance certification reports will be due annually beginning 12 months from the permit issuance date.

**Comment 9:** Tier I Operating Permit – Section 21: Clarify what will need to be reported in annual compliance certification since the IRC has no significant emission units. We suggest a list of emission units with specific permit requirements/emission limits be tabulated. However, the IRC permit is not conducive for this suggestion, but (the suggestion) should be considered for other permits. We suggest this section be removed for the IRC permit.

The same comment suggested adding the text, "for each significant emissions unit" to Sections 21 and 21.2 of the Tier I Operating Permit General Provisions.

Another comment stated: Compliance certification is vague, please clarify this section and requirements.

Compliance certification is required annually for all applicable requirements. The permit sets forth the applicable requirements. The permittee is required to certify compliance or noncompliance with those requirements.

**Comment 10:** Add "Information Only" next to the title of Section 5.2 of the technical memorandum. Delete references in Sections 5.2.2, 5.2.3, and 5.2.4 that there are radionuclide NESHAP permit conditions in the Tier I operating permit. For example – delete "Permit Condition 3.1 of the Tier I operating permit."

The Tier I operating permit is a consolidation of all applicable federal and state requirements. The technical memorandum provides the justification for each permit condition. Therefore, Sections 5.2.2, 5.2.3, and 5.2.4 remain in the technical memorandum and "Information Only" was not added to the title of Section 5.2.

**Comment 11: Why was the IRC permit not reviewed by DEQ in a timely manner, given that defects in the permit were discovered, just too late to issue an "Incompleteness Letter"?**

The Department acted on the application given the resources available at the time the application was received.

**Comment 12: Was there a previous Title V or Tier I permit for this facility?**

No Title V or Tier I operating permit was previously issued for this facility.

**Comment 13: Identify the state and federal rules requiring DOE to apply for a Tier I permit. Provide the earliest date that the identified rules became applicable to the IRC. Provide the earliest date that the identified rules required the submission of a Tier I permit. Provide the dates that the IRC has previously submitted a Tier I application. Provide any dates that Tier I application was approved by any state or federal agency.**

In accordance with 40 CFR 70.3(a)(3), a State program with whole or partial approval must provide for permitting any source subject to a standard or other requirement under section 112 of the Clean Air Act. However, in accordance with 40 CFR 70.3(b)(2), *"All sources listed in paragraph (a) of this section that are not major sources, affected sources, or solid waste incineration units required to obtain a permit pursuant to section 129(e) of the Act, may be exempted by the State from the obligation to obtain a part 70 permit until such time as the Administrator completes a rulemaking to determine how the program should be structured for nonmajor sources and the appropriateness of any permanent exemptions in addition to those provided for in paragraph (b)(4) of this section."*

The IRC facility is not a major facility for the purposes of Tier I operating permit requirements. The IRC facility is required to obtain a Tier I operating permit because the facility is subject to 40 CFR Part 61, Subpart H. In accordance with IDAPA 58.01.01.313.e.i, Tier I sources identified in IDAPA 58.01.01.301.02.b.iv and existing on January 1, 2000 are required to submit a complete application for an original Tier I operating permit by no later than June 1, 2000. However, such facilities may register with the department by submitting information listed in IDAPA 58.01.01.313.01.f by May 1, 2001, and would then be required to submit a complete application by no later than June 1, 2005. The facility submitted a Tier I operating permit application in lieu of requesting a deferment.

**Comment 14: Explain why the IRC as an entity should be kept separate from the INEEL facility approximately 42 miles to the west of IRC from the perspective of being part of a "major source" (40 CFR Part 63, Subpart A) considering overall air emissions from the operation of INEEL within the affected airshed. The INEEL facility to the west and the IRC are within 50 miles of each other and under a common ownership. For radionuclides "major source" shall have the meaning set forth by the Administrator (40 CFR 70.2). INEEL is a major source for emission of radionuclides. IRC should be considered as part of the total emissions of radionuclides for INEEL operations in Idaho.**

- a. INEEL and its numerous other facilities, notable at INTEC and other locations, has not been approved for a Title V permit under the Clean Air Act (42 U.S.C. 7404 et seq.). INEEL is a major source from all its activities in Idaho and IRC should be required to be permitted within the Title V context with other INEEL facilities.
- b. IRC should be part of a general permit for INEEL facilities.
- c. What research/projects/experiments is IRC carrying out that are related to the INEEL mission?

In accordance with 40 CFR 70.2, a "Major source" means any stationary source (or any group of stationary sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person (or persons under common control)) belonging to a single major

*industrial grouping...*" The INEEL main facility and the IRC are separated by more than 30 miles. The two facilities are not located on one or more contiguous or adjacent properties; therefore, they are not one facility.

**Comment 15:** It is not clear that the IRC has met the necessary requirements to receive an application shield or a permit shield. The IRC application for a permit and application shield does not appear to be submitted within the required time frames and is past the deadline for such a submission. DOE has not set forth or described the requirements for a permit shield under 40 CFR 70.1 et seq. with which DOE must be in compliance. DOE cites 40 CFR 70.7(b), however this is not the appropriate section to cite for the requirements for an application shield or a permit shield. DOE has provided no information as to how DOE is in compliance with the requirements of 40 CFR 70.6(f) for a permit shield.

I request a copy of documentation that provides the legal and factual basis for the draft permit conditions to be imposed. These must be furnished prior to the issuance of the permit.

Emergency provisions do not comport with requirements of 40 CFR 70.6(g) because the DOE has not demonstrated that it has taken all reasonable steps to minimize levels of emissions.

Nothing in the operating permit sanctions noncompliance with INEEL IRC's failure to submit a timely application.

The technical memorandum included in the public comment package is the document that establishes the legal and factual basis for the draft permit. See Section 1 of the technical memorandum.

If an emergency event occurs at the IRC facility, then to establish an affirmative defense the facility must demonstrate that the event constitutes an emergency and Section 332 criteria are satisfied. See General Provision 27.

**Comment 16:** When did the State get primacy for the Title V/Tier I program, and why has the IRC operated apparently without a permit since that point?

The State of Idaho received interim approval for its Title V/Tier I program on January 6, 1997. Full approval of the Title V/Tier I program was granted to the State of Idaho on November 5, 2001.

In accordance with IDAPA 58.01.01.301.b.iv, the earliest date the IRC was required to obtain a Tier I operating permit was June 1, 2001.

**Comment 17:** Which projects or facilities have received Permits to Construct (PTCs) at the IRC?

There have been no PTCs issued for projects or facilities at the IRC.

**Comment 18:** Why does the permit state that there were no previous permits, while including in the documentation a 1989 PTC for the IRC?

The 1989 PTC identifies maximum uses of radionuclides that are far smaller than those reported for actual use, compared to Appendix E compliance Table B-1. These considerable exceedances demonstrate a disregard for the PTC.

The documentation included in the public comment package was a PTC application, not a PTC. The application was included because of the detailed facility description it provided. In accordance with 40 CFR 61.96, EPA responded in a letter dated March 29, 1990 to DOE that neither an application for approval, nor a notification of startup, need be filed for a radiological source if the estimated effective



dose equivalent caused by all emissions from the new construction or modification is less than 1% of the standard prescribed in 40 CFR 61.92. A copy of this letter is included as Attachment A.

**Comment 19: What Notices of Violations (NOVs) or consent orders apply to this facility?**

Consent orders or NOVs have not been issued to this facility.

**Comment 20: Are there conditional exemptions for the IRC? Is the Director's exemption (February 1998) still in effect? Why is this not discussed in the permit?**

The IRC was granted two conditional exemptions. One exemption (P-910503) was issued May 5, 1992, and the other exemption (P-910706) was issued November 13, 1991. The Department received notifications from INEEL on April 8, 2002 that the equipment addressed in the two conditional exemptions are no longer operated at the facility.

The Director's exemption issued in March 1998 is still in effect. The exemption is for a field scale carbon-14 and tritium column test. Copies of the director's exemption and application, and the letter to the Department regarding the conditional exemptions are included in Attachment B to this response to comments.

The exemptions were not discussed in the permit because the activities are exempted from the permitting process; therefore, the exemptions are not applicable requirements in accordance with IDAPA 58.01.01.008.03. The only applicable requirements that exist for radionuclide emissions are those specified in 40 CFR Part 61. The Tier I operating permit contains all of these requirements.

**Comment 21: Is the 15,000-gallon gasoline storage tank part of this permit or is it exempted?**

The 15,000-gallon gasoline storage tank is part of the permit. The applicable requirements for the storage tank are located in 40 CFR 60.110b(c), 60.116b(a), and 60.116b(b). By oversight, these conditions were not included in the proposed Tier I operating permit. The following conditions were added to the Tier I operating permit.

*"2.21.1 The permittee shall keep readily accessible records showing the dimension of the fuel storage tank vessel and an analysis showing the capacity of the storage vessel.*

*2.21.2 The permittee shall keep copies of the records required by Permit Condition 2.21.1 for the life of the fuel storage tank."*

Because these are applicable requirements for the 15,000-gallon gasoline storage tank, the source is not insignificant and was removed from Table 4.1 of the Tier I operating permit.

**Comment 22: The nature and extent of the IRC's HAP use and emissions is unclear.**

**What Hazardous Air Pollutants may potentially be emitted?**

**Describe organic emissions which may occur.**

On page I-9 of the permit application DOE stated that HAP emissions from the IRC are approximately 1.5 tons per year for total HAPs, with no single HAP emitted at greater than 1 ton per year. The application is certified as true, accurate, and complete.

In reviewing the source file at DEQ's State Office and Regional Office, there was no information to indicate the IRC is a major source of HAPs. EPA published guidance on July 10, 1995 titled "White Paper for Streamlined Development of Part 70 Permit Applications." Section 10 on page 16 of this

guidance discusses applications for non-major sources. The first sentence in this section states, "Applications for non-major sources subject to part 70 can be less comprehensive than those for major sources." The section further states, "...70.3(c)(2) stipulates that permits for non-major sources have to address only the requirements applicable to emissions units that cause the source to be subject to part 70 (e.g., requirements of sections 111 or 112 of the Act applicable to non-major sources). Other emissions units at non-major sources that do not trigger part 70 applicability, even if they are subject to applicable requirements, do not have to be included in the permit. Since permits for non-major sources do not have to include applicable requirements for emissions units that do not cause the source to be subject to part 70, no information on those units is needed in the permit application."

The IRC permit application satisfies the application requirements as stated in the guidance document.

**Comment 23:** Radiological releases from the IRC could arise from uncontrolled laboratory fume hoods within the facility. Laboratory fume hoods are uncontrolled. No HEPA filters are on the laboratory hoods. There is a possibility of radiological releases. Explain why DOE should not provide HEPA filtration when radiological releases could occur within an adjacent residential area including a nearby major university, nearby sports complexes, major highway corridor, and federal buildings. A reasonable permit requirement would be the installation of HEPA filters.

An additional comment was received requesting a requirement for HEPA filters at the facility.

**How will sampling, analyses, monitoring, and recordkeeping requirements be met for the variety of research/experiments conducted at IRC?**

On July 10, 1995, the EPA published guidance on the Title V permitting process. This guidance includes the following description of the Title V permitting program: "Title V of the CAA and its implementing regulations in Part 70 set forth minimum requirements for State operating permit programs. In general, this program was not intended by Congress to be the source of new substantive requirements. Rather, operating permits required by Title V are meant to accomplish the largely procedural task of identifying and recording existing substantive requirements applicable to regulated sources and to assure compliance with these existing requirements. Accordingly, operating permits and their accompanying applications should be vehicles for defining existing compliance obligations rather than for imposing new requirements or accomplishing other objectives."

As discussed in Comment 17, there have been no permits issued by the Department that require the installation of HEPA filters. In accordance with IDAPA 58.01.01.008.03 and the July 10, 1995 EPA guidance, no new requirements, including the installation of HEPA filters, will be imposed on the facility.

Applicable requirements for radionuclide emissions are located in 40 CFR Part 61, Subpart H, *National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities*. Subpart H describes the emission standard, emissions monitoring and test procedures, compliance and reporting, and recordkeeping requirements for radionuclide emissions (except radon) at DOE facilities. The NESHAP standard does not require installation of HEPA filters. In addition, the Department of Energy established with EPA Region 10 in 1996 a procedure to demonstrate compliance with the applicable NESHAP for radionuclides. The correspondence between DOE and EPA Region 10 is included as Appendix D of the technical memorandum.

**Comment 24: What is the nature of the different types of research processes and the amount of radiological materials associated with each process?**

**Will any experiments/research regarding criticality take place? Or will there be use of radiological materials which can go critical?**

**How will sampling, analyses, monitoring, and record keeping requirements be met for the variety of research/experiments to be conducted at IRC?**

Applicable requirements for radionuclide emissions, including emissions monitoring and test procedures, compliance and reporting, and record keeping requirements, are contained in 40 CFR Part 61, Subpart H. Subpart H requires DOE to determine an effective dose equivalent from radionuclide emissions from the facility. As discussed in Comment 23, DOE and EPA have developed an alternative method to demonstrate compliance with this subpart. In either case, Subpart H does not require the facility to list the different research processes or experiments occurring at the facility. Therefore, this information was not required in the permit application and is not relevant to the Tier I operating permit.

Laboratory equipment used exclusively for chemical and physical analyses, research, or education, including ventilating and exhaust systems for laboratory hoods, are generally exempt for obtaining a PTC in accordance with IDAPA 58.01.01.222.01.a. Record keeping requirements to satisfy exemption criteria are detailed in IDAPA 58.01.01.220.02 and IDAPA 58.01.01.223. The IRC is required to comply with these regulations.

**Comment 25: Where are the attachments referred to in the correspondence between the DOE and EPA, that cite the legality of simply using the old NRC methods for compliance (Appendix E compliance tables)?**

The letter from DOE to EPA Region 10 dated June 11, 1996 included two enclosures. By oversight, these enclosures were not included in the technical memorandum for the Tier I operating permit. The correspondence between DOE and EPA Region 10, with all referenced enclosures, are included as Appendix D of the technical memorandum for the Tier I operating permit.

**Comment 26: What are the total inventories for each type of radiological material?**

The inventories for each type of radiological material at the IRC are reported annually in the annual NESHAP report submitted by DOE to EPA and DEQ.

**Comment 27: Temporary source determinations (TSDs) are obviously important given the nature of IRC activities. Please clarify the terms and conditions in the permit.**

**How does the stated "self-determined compliance with IDAPA 58.01.01.200/220" relate to TSDs?**

Temporary sources are not explicitly exempted from obtaining a PTC prior to construction. There is no discussion of temporary sources in the Tier I operating permit because there are no applicable requirements regarding temporary sources at this facility.

Sections 220 through 223 may be used by owners or operators to determine if sources, including temporary sources, are exempt from obtaining a PTC. There are no requirements to submit exemption determinations made by a facility. However, in accordance with IDAPA 58.01.01.220.02, the owner or operator of the source shall maintain documentation regarding the exemption at the facility for a period of not less than five years from the date the exemption determination has been made or for the life of the source, whichever is greater. The owner or operator must submit the

documentation to the Department upon request.

**Comment 28: Why is a declaration by the DOE for the shop not being a source of air pollution (for other than sawdust) sufficient? The DOE clearly states that the shop is used for painting, one can assume that solvent and other cleaners will also be used. Ordinary private painting and cleaning facilities are required to report their emissions, why not the IRC? Given the dynamic nature of the activities at IRC, this is a huge potential source of air pollutants that will be going unmonitored and unreported.**

The purpose of the Title V program is to identify existing substantive requirements applicable to regulated sources and to ensure compliance with these existing requirements. Applicants are required to certify the information contained within the application is true, accurate, and complete. The purpose of Title V is to describe the applicable requirements and prescribe appropriate monitoring and recordkeeping requirements to reasonably assure compliance with the applicable requirements.

DOE has certified that surface coating operations at the shop are insignificant in accordance with IDAPA 58.01.01.317.01.b.i.(17), and welding operations at the shop are insignificant in accordance with IDAPA 58.01.01.317.01.b.i.(9). In accordance with IDAPA 58.01.01.317.01.b.i, units and activities determined to be insignificant based on their size or production rate must be listed in the permit application. DOE has satisfied this requirement by listing the surface coating and welding activities in Section 1.10.2.3 of the application.

Specific to surface coating operations, the criteria for qualifying as an insignificant source is a surface coating operation using less than 2 gallons per day. There are no other applicable requirements for surface coating or other activities within the maintenance shop.

**Comment 29: Particulate testing description and rationale are unclear. Why is it not a permit condition?**

**Particulate assumptions are based on a single "test", this is unreasonable and cannot provide any indication of the actual particulate emissions. A routine sampling program should exist to validate assumptions.**

Compliance with the process weight requirement is reasonably assured so long as a cyclone is installed and operated when the wood shop is operated. Therefore, the permit contains a condition to operate and maintain a cyclone in the wood shop.

**Comment 30: How does Maximum Achievable Control Technology (MACT) relate to the generators and shop activities?**

**What is the applicability of MACT requirements to the IRC?**

The MACT requirements apply to major sources of HAPs and are identified by source category in 40 CFR Part 63. The facility is not a major source of HAPs. There are no source categories at the IRC facility for which MACT requirements have been proposed or promulgated.

**The following comments are not air quality related and are not addressed in the response to public comments.**

- Is IRC located within the floodplain for the Snake River? Where is the topographical map for the IRC?
- Does IRC have RCRA permits which are related to storage or emissions? Any other processes requiring RCRA permits? Any RCRA wastes as a result of processes? Describe RCRA wastes and how they will be stored, for what period of time and where RCRA wastes will be sent and the estimated annual amounts of those RCRA wastes.
- What is the applicability of TSCA to the biotechnology and other research conducted at IRC? Does DOE currently have any TSCA permit for the facility or an application pending for a TSCA permit?
- Does DOE have a Clean Water Act (NPDES) permit for the IRC? Is there an application pending for an NPDES permit?
- Does the 15,000-gallon underground storage tank at the facility meet current applicable UST design and monitoring standards?
- What is the possibility for water reactive chemicals at IRC to cause air releases?
- IRC is an open facility without a guarded gate. Explain protections against terrorist acts or for theft of chemical, radiological, or biological materials by employees and releases that may result.

**END OF COMMENTS**

***APPENDIX C***

**IDAHO NATIONAL ENGINEERING AND  
ENVIRONMENTAL LABORATORIES**

**IRC COMPLEX**

**COMBUSTION EVALUATION**



Idaho Department of Environmental Quality  
Office of Technical Services

### Calculation Cover Sheet

Calc. Number:

1

Project No.:

T1-010908

Discipline:

Number of Sheets:

3

Project:

IRC Title V - Tier I Operating Permit

Title of Calculation:

IRC Complex Combustion Evaluation

Item:

Source of Data:

AP-42, Table 1.4-2

IDAPA 58.01.01.677

Sources of Formulas/References/Assumptions:

☐ Preliminary Calculation

☒ Final Calculation

Supersedes Calculation Number \_\_\_\_\_

Rev. No.	Revision	Calculation By	Date	Checked By	Date	Approved By	Date

## Combustion Evaluation - 2.65 MMBTU/hr Boilers - IRC Complex

### Fuel Data (% by weight)

S  
N2  
C  
H2  
H2O  
O2

0.5  
0.76  
74.72  
23.3  
0.5  
1.2

Fuel burned (lb/hr)

Excess air (%)

Stk temp (F)

Stk press (atm)

115.7

25

463.58

1

### Combustion Air Required

	O2 lb.mole	N2 lb.mole
S	0.02	0.07
N2	0.00	0
C	7.20	27.08
H2	6.69	25.16
O2	-0.04	
	<u>13.86</u>	<u>52.31</u>

stioc. comb air = 73.06775 lb.mole/hr

stoic. dry comb air = 59.525157 lb.mole/hr

### Flue Products

	lb.mole	lb/hr
SO2	0.02	1.15
N2	53.39	1494.34
CO2	7.20	316.70
H2O(comb)	13.48	242.62
O2	0.28	8.87
H2O(fuel)	0.03	0.58
	<u>60.88</u>	
dry	60.88	
wet	74.39	

Volume of flue gas (acfm)	836.1
Volume of flue gas (adcfm)	385.3
Volume of flue gas (dscfm@7%O2)	565.0
Volume of flue gas (dscfm@15%O2)	1318.4
Volume of flue gas (dscfm@8%O2)	608.5
Volume of flue gas (dscfm@3%O2)	439.5
Volume of flue gas (dscfm@10%O2)	719.2





Project IRC Tier I OP Work Order \_\_\_\_\_ File No. T1-010908

Title of Calculation Combustion Evaluation Prepared By MJS Date 02/04/02

Item \_\_\_\_\_ Checked By \_\_\_\_\_ Date \_\_\_\_\_

According to preceding combustion evaluation, the exhaust flow rate is  
439.5 dscfm @ 3% O<sub>2</sub> for each boilers,

Boilers are both 2.65 MMBTU/hr

According to AP-42, Table 1.4-2, the emission factor for total particulate  
matter is  $7.45 \times 10^{-3}$  lb/MMBTU (for natural gas).

$$\therefore \frac{7.45 \times 10^{-3} \text{ lb}}{1 \text{ MMBTU}} \cdot \frac{2.65 \text{ MMBTU}}{1 \text{ hr}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{439.5 \text{ dscf}} \cdot \frac{7000 \text{ gr}}{1 \text{ lb}} =$$

$$\boxed{0.0052 \text{ grains/dscf @ 3\% O}_2}$$

***APPENDIX D***

**IDAHO NATIONAL ENGINEERING AND  
ENVIRONMENTAL LABORATORIES**

**IRC COMPLEX**

**EPA CORRESPONDENCE**



Department of Energy  
Idaho Operations Office  
850 Energy Drive  
Idaho Falls, Idaho 83401-1563

June 11, 1996

Ms. Anita Frankel, Director  
Office of Air  
United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue  
Seattle, Washington 98101

SUBJECT: 40 CFR 61 Subpart H Compliance for the Idaho National Engineering Laboratory Research Center (IRC) (OPE-EP-96-181)

Reference: "Memorandum of Understanding between the U. S. Environmental Protection Agency and the U. S. Department of Energy concerning the Clean Air Act Emission Standards for Radionuclides 40 CFR Part 61 including Subparts H, I, Q & T," April 5, 1995

Dear Ms. Frankel:

In preparation for the NESHAP - Radionuclides Annual Report, the Idaho National Engineering Laboratory (INEL) has determined that a facility with potential radionuclide emissions has not previously been reported. The facility is the Idaho National Engineering Laboratory Research Center (IRC). The IRC is located in Idaho Falls, Idaho, some 50 miles east of the INEL site. The IRC supports energy-related programs at the INEL and provides the capacity to conduct independent research and development activities in cooperation with other government agencies, private companies, universities and nonprofit organizations.

On April 18, 1996, I met with Mr. Jerry Leitch of your office and we discussed the incorporation of the IRC into the INEL's NESHAP Annual Report. The following is the path forward discussed with Mr. Leitch and hopefully will meet with your approval.

Enclosure 1 is the reporting information required under 40 CFR 61 Subpart H for the IRC. This enclosure is based on current operation at the facility. It is our intention to provide this information on the IRC as an appendix to the INEL Annual Report because although the IRC is part of the INEL it is not part of the INEL's contiguous site (per the NESHAP's definition of "facility") and, as a separate facility, presumably must independently demonstrate compliance, however it is not cost effective to prepare and print a separate report specifically for the IRC.

Ms. Anita Frankel

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Compliance demonstration will be accomplished through the application of 40 CFR 61, Appendix E. The use of appendix E was discussed with Mr. Leitch in that the IRC is like facilities that are normally licensed by the Nuclear Regulatory Commission (NRC) and that the use of Appendix E is allowed under section 6 of the Memorandum of Understanding (Reference a). Appendix E allows a facility to report Radioactive Material "Possession Quantities" to demonstrate compliance in lieu of dose modeling if the facility maintains an inventory below the "Possession Quantity Limit." The table provided (see enclosure 1), showing possession quantities at the IRC, reflects the total amount received during the calendar year added to the amount on hand at the beginning of that calendar year. All quantities on hand for calendar year 1995 were below the possession quantity limits in Appendix E. As a result, no actual dose information has been included in enclosure 1. However, enclosure 2 conservatively estimates the IRC emissions at  $2.9E-2$  mrem/yr, well below the 10 mrem/yr standard. The format for the remainder of the INEL's radiological sources in the NESHAP Annual Report will remain unaffected by this change.

If you have any questions or find this format unacceptable, please contact me at (208) 526-1407 or Deborah Wiggins of Lockheed Idaho Technologies at (208) 526-9989.

Sincerely,



John E. Medema  
DOE-ID NESHAP program

Enclosures



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 Sixth Avenue  
Seattle, Washington 98101

JUL 05 1996

Reply to  
Attn of: OAQ-107

John E. Medema  
Department of Energy  
Idaho Operations Office  
850 Energy Drive  
Idaho Falls, Idaho 83401-1563

Dear Mr. Medema:

This is in response to your letter dated June 11, 1996 concerning 40 CFR Subpart H Compliance for the INEL Research Center (IRC) (OPE-EP-96-181).

The information which you have provided is sufficient to demonstrate the compliance status of the IRC. Based on the information which you provided, that facility is in compliance with the applicable NESHAP for radionuclides.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jerry Leitch".

Jerry Leitch  
Radiation Program Manager